

REMARKS

Status of the Application

Claims 1-18 are the claims that have been examined in the instant application. Claims 1-2 and 5-18 stand rejected under 35 U.S.C. § 102(b) as being anticipated by newly cited Wong (4,730,112). Claims 3-4 are objected to as being dependent upon a rejected base claim.

Preliminary Matters

Applicants thank the Examiner for withdrawing the anticipation rejection of claims 1-16 over Gibbs (U.S. 5,463,648).

Allowable Subject Matter

Claims 3-4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicants thank the Examiner for indicating that claim 3 and 4 would be allowable if rewritten in independent form, but respectfully request that any rewriting of claims 3 and 4 be held in abeyance until the Examiner has taken the opportunity to reconsider the prior art rejection of the remaining claims.

Claim Rejections - 35 USC § 102

Claims 1-2 and 5-18 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Wong (4,730,112).

Claim 1 recites, “heating the semiconductor laser with a heater when the semiconductor laser is not in operation,” and “performing one of a first operation of stopping heating of the semiconductor laser and a second operation of decreasing an amount of heat supplied to the semiconductor laser, almost simultaneously with startup of the semiconductor laser.” The Examiner alleges that Wong discloses all of the aspects of claim 1, citing FIG. 14, elements 16 and 96, and citing column 11, lines 32-67. Applicants respectfully disagree.

FIG. 14 of Wong discloses a diode laser which emits radiation in multiple directions. The diode laser may be connected to a heat sink which is also connected to a heater and a cooler for adding or removing heat from the heat sink. The temperature of the diode laser may be indirectly altered by the heater and cooler. See col. 11, lines 33-40 of Wong. However, FIG. 14 of Wong fails to teach or suggest that the diode laser is heated when the laser is not in operation. Col. 11, lines 24-32 indicate that the heat sink will be at an ambient temperature when the diode laser is turned on. The heat sink is then used to help the diode laser maintain a particular temperature (and therefore, wavelength) by either applying heat or removing heat while the diode laser is in use, not to apply heat to the laser while the diode laser is not in operation. Col. 11, lines 35-40 discuss that either a heater or a cooler may be applied to *the heat sink* to indirectly alter the temperature of the laser. However, this heating or cooling occurs during operation of the diode laser, not when the laser is not in operation, as recited in claim 1. In order to determine the necessary heating and cooling, an error signal is generated by operation of the diode laser which indicates if the wavelength of the laser is accurate. See col. 11, lines 14-22 of

Wong. As such, Wong cannot heat or cool the diode laser when the diode laser is not in operation since no error signal is generated when the laser is not in operation.

Further, Wong fails to indicate that the heat applied to the laser by the heat sink is stopped or lessened *almost simultaneously* with startup of the semiconductor laser. Because the diode laser in Wong is attached to a heat sink, the heating of the diode laser continues after start up, as heat transfer from a heat sink cannot be controlled on or off at a particular given time, specifically, upon startup of the diode laser. The heater in the claimed invention is either a wire heater or a heating resistor. Both of these heaters may be turned off immediately by stopping the current applied to the wire or resistor. See claims 13-16 of the instant invention. By using a heat sink between the diode laser 16 and the heater 96 (and cooler 98), it would be impossible to stop heating or decrease the amount of heat supplied to the diode laser simultaneously with startup, as claimed in claim 1. Assuming that the heater 96 may be shut off immediately upon starting the diode laser 16, the heat sink would still continue heating the laser after start up, until the laser reached a temperature equal to that of the heat sink.

For the reasons listed above, claim 1 is patentable over the applied art. Claims 2 and 5-18 are patentable at least by virtue of their dependency from claim 1.

Additionally, claims 13-16 are patentable for reasons independent of their dependency. Claims 13-16 recite “wherein said heater comprises a heating wire or heating resistor.” The Examiner is interpreting that the connection line in Wong is a wire, as thus anticipates claims 13-16. However, no support from the reference explicitly or implicitly indicates that the connection line functions as a heating wire. Rather, FIG. 14 of Wong simply shows a box attached to the

heat sink, which is labeled as a heater. Wong does not discuss the physical makeup of the heater, other than that it is electric. See col. 9, lines 7-9 of Wong. Therefore, claims 13-16 are patentable, as Wong fails to teach or suggest the claimed physical construction of the heater.

Claim 18 is also patentable for reasons independent of its dependency. Claim 18 recites “wherein the voltage applied to the heater is applied incrementally to alternate with application of a voltage to the laser. The Examiner asserts that col. 11, lines 33-40 of Wong teach or suggest this aspect of the claim. However, the cited portion of Wong does not mention an incremental application of voltage to a heater or to the laser, nor does it state that these applications occur alternatively. Rather, the laser and the heater in Wong are operated simultaneously in order to maintain a particular temperature and wavelength for the laser. See col. 11, lines 33-57 of Wong. Therefore, claim 18 is patentable over the applied art.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

RESPONSE UNDER 37 C.F.R. § 1.111
U.S. Application No. 10/871,780

Q77646

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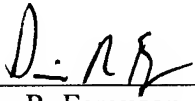
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Date: April 19, 2007